



CHINA LP NEWSLETTER



DO IT, DREAMS BECOME A REALITY!

Issue 33, September 28, 2012

THIS NEWSLETTER FOR TYSON CHINA LP TEAM MEMBERS



The purpose of this newsletter is to provide weekly timely information concerning live production. The articles will address frequently discussed subjects and are to be shared with all Tyson China LP team members. If you have suggestions for this newsletter, please email at kevin.zhao@tyson.com.

本通讯的目的是每周将有关活禽生产的信息及时地传递给泰森中国活禽团队的所有成员，所涉及到的内容主要为生产中经常会碰到的问题。如果您有对该通讯有好的建议，请联系kevin.zhao@tyson.com。

Water Line Sanitation

水线清洁卫生

Susan Watkins

University of Arkansas

Flocks are healthier and perform better economically when a daily clean water source is provided.

每日给鸡群提供清洁的饮水可以让鸡群更加健康、生长的更好

Providing a clean water source every day is essential to ensuring your flock's health and best economic performance. The water lines that carry the water to your birds are not transparent; it is not possible to see what is happening inside them. It is easy to forget about this part of the building when cleaning and disinfecting between flocks. It is important to make a note to clean the water system after every flock.

每天提供清洁的饮水对确保鸡群的健康和达到最大的经济效益是至关重要的。运输饮水的水线是不透明的；观察水线内的情形是不可能的。空舍期清洁、消毒的时候很容易遗忘水线这部分。每批鸡出栏后要记得清洁饮水系统，这点是很重要的。

Successful water sanitation begins with a thorough water line cleaning program. The variability and dynamics of water systems create cleaning challenges, but these can be overcome with water quality information, a little effort and the right tools. Follow these guidelines and your birds will have a first-class water supply:

成功的水线消毒是以彻底的水线清洁开始的。饮水系统的差异性和动态性给清洁工作带来了诸多挑战，但是这些挑战可以通过对水质的了解、我们进一步的努力和利用正确的工具来加以解决。遵循下面的指导，我们的鸡群将会得到一流的饮水供给。

Step One: Have the Water Analyzed

第一步：分析水质

Analyze the water for any scale-causing minerals: calcium, magnesium and manganese. If the water contains more than 90 ppm combined calcium and magnesium or 0.05 ppm manganese, you will need to include a "descaler" or an acid in your cleaning program. These products will dissolve the mineral deposits in water lines and fittings.

对引起水锈的所有的矿物质进行分析：钙、镁、锰。如果水中含有钙和镁的总含量超过90ppm或锰的含量达到0.05ppm，我们就需要在清洁方案中加入去锈剂或加酸的举措。这些产品可以溶解水线及配件中的矿物质。

Step Two: Choose a Sanitizing Cleaner

第二步：选择清洁剂

Choose a sanitizing cleaner that can effectively dissolve any bio-film or slime in the system. Some of the best products for this job are concentrated hydrogen peroxide solutions.

选择可以有效溶解饮水系统生物膜或粘膜的清洁剂。在这方面最好的产品有：浓缩的过氧化氢溶液。

Prior to using any strong cleaners, make sure standpipes are working properly so air pressure build-up in the lines will be released. Consult equipment suppliers before using products to prevent unnecessary damage.

在施用任何强清洁剂前，请确保水压显示管能正确工作以便将水线中蓄积的气压能释放出来。在施用产品前需要咨询设备供应商以防止不必要的设备损害。

Step Three: Prepare the Sanitizing Solution

第三步：配制消毒液

For best results, use sanitizing products at the strongest concentration recommended on the label. Most proportioners will only allow concentrations between 0.8 and 1.6% of the original material. If you need to use higher concentrations it is better to mix the stock solution in a large tank and then distribute without use of a proportioner. For example, if a 3% solution is required, mix three volumes of the cleaner with 97 volumes of water for the final solution.

为了得到最佳的效果，消毒产品可以按照标签上推荐的最强的浓度来进行。大部分的溶液比例配制器仅允许消毒剂的浓度在0.8%到1.6%。如果需要使用更高浓度的消毒剂，最好在较大的容器里进行母液的配制，然后分流溶液时不用溶液比例配置器进行。例如：如果需要配制3%的溶液，可以将3份的清洁剂和97份的水进行混合来获得最终的溶液。

An excellent sanitizing solution can be made up by using a 35% hydrogen peroxide solution. Mix this as described for a 3% solution.

优秀的消毒液可以采用35%的过氧化氢溶液。按照上面配制3%的消毒液那样来配制。

Step Four: Clean the Lines

第四步：清洁水线

It takes 8-10 US gallons (30-38 liters) of water to fill and clean 100 feet (30 m) of 3/4 inch (20 mm) water line. If the building is 500 feet (150 m) long and has two water lines you should make up a minimum of 100 gallons of sanitizing solution.

充满和清洁100英尺/30米长，3/4英寸/20厘米直径的水线，需要大约8到10加仑（30到38升）的水分来冲洗饮水系统。如果鸡舍是500英尺/150米，装有2条水线的话，我们应该准备至少100加仑的消毒液。

Follow these steps to clean the water lines:

按照下面的这些步骤来清洁水线：

1. Open water lines so they drain completely.
打开水线以便能彻底排尽水分
2. Begin pumping the cleaner/sanitizer through the water lines.
将清洁剂/消毒剂泵入水线中。
3. Watch the water as it leaves the drain line for signs of the product such as foaming or suds.
在水分排出水线时观察清洁剂/消毒剂的状态：是否有泡沫或肥皂泡沫。
4. Once water lines are filled with the cleaner, close the tap and leave product in the lines for as long as the manufacturer recommends (over 24 hours if possible).
一旦水线中加入清洁剂后，关闭开关让清洁剂在水线中尽可能地按照制造商推荐的时间来停留（如果可能可以超过24小时）。

5. Flush cleaner from the water lines after the holding period. Water used to flush the lines should contain the level of sanitizer normally used in the drinking water for the birds.

清洁剂在水线中滞留一段时间后，进行清洁水线。用于清洁水线的水应该含有供鸡只喝水时所用的正常浓度的消毒剂。

6. After cleaning, sanitizing and flushing the system, the water supply should be fresh and chlorinated (3-5 ppm in the drinker furthest from the source). If using an Oxidation Reduction Potential (ORP) meter, the reading should be a minimum of 650.

清洁、消毒、冲洗系统后，供应的饮水应该新鲜和加氯（离水源最远处的水的浓度是3到5ppm）的。如果使用氧化还原电位（ORP）表，读数至少应该是650。

7. Water lines from the water well to the poultry buildings should also be cleaned and sanitized between flocks. It is best not to flush these outside water lines through the water lines inside the buildings. Connect a water hose to the medicator faucet to drain the outside lines.

空舍期时从水井进入鸡舍的水线也要进行冲洗和消毒。最好不要通过鸡舍内的水线来冲洗鸡舍外的这些水线。将一个水管连接到给药器的接口上来将外面的水线排尽。

Step Five: Remove Mineral Build-up

第五步：清除矿物质的蓄积

After lines are cleaned, descaler or acid products can be used to remove the mineral build-up. Use products according to the manufacturer's recommendation. One product that can be used for this is citric acid.

水线清洁后，需要用去锈剂或酸化剂来清除蓄积的矿物质。按照制造商的建议来使用这些产品。这些产品中可以使用的一个产品是柠檬酸。

1. Make a stock solution by mixing 1-2 packs of citric acid (1 pack contains approximately 15 ounces in one gallon of water [210 g in 23.8 liters]). Proportion this stock solution at 1 ounce per gallon or 7.5 grams per liter (0.8% or 1:128). Fill water lines and let stand for 24 hours. It is critical that the water pH is below 5 for optimum scale removal.

将1到2个包装的柠檬酸配制成贮存液（1个包装大约是1加仑水中含有15盎司的柠檬酸，即23.8升水中含有210g柠檬酸）。每加仑水加入1盎司的贮存液或每升水加入7.5克的贮存液（0.8%或1:128）。将配制好的溶液注入水线中，让其静置24小时。最佳的除锈的pH是小于5，这点是很关键的。

2. Empty the water lines. Mix a stock solution containing 8-12 oz of 5% bleach per gallon or 60-90 grams per liter. Then refill the lines with clean water containing this stock solution proportioned at 1 ounce per gallon or 7.5 grams per liter (0.8% or 1:128). Leave in the water lines for 4 hours. This concentration of chlorine will kill any residual bacteria and further remove bio-film residue.

清空水线。每加仑水中加入8到12盎司的5%漂白剂或每升水中加入60到90克来配制贮存液。每加仑水中加入1盎司的贮存液或每升水中加入7.5克（最终浓度0.8%或1:128），然后加入水线中。让其在水线中滞留4小时。该浓度的氯可以杀死任何残留的细菌病来进一步清除残留的生物膜。

3. Perform a final flush of the water lines, use water with a normal drinking water level of sanitizer. Continue flushing until the water in the lines contains no more than 5 ppm of chlorine when tested.

进行最后一次的水线冲洗，使用含有正常含量消毒剂的水。继续冲洗水线直至含有的氯含量低于5ppm。

Step Six: Keep the System Clean

第六步：保持系统的清洁

Once the system has been sanitized, it is important to keep it clean. Develop a good daily water sanitation program for your birds. The ideal water line sanitation program should include injecting both a sanitizer and an acid. It is important to note that this procedure requires two proportioners or injectors, since acids and bleach should never be mixed in the same stock solution.

一旦饮水系统消毒后，保持其清洁就很重要。为鸡群制定一个每日饮水消毒方案。理想的水线消毒方案包括消毒剂和酸化剂。需要注意到这个步骤需要2个药物配比器或注入器，这是因为酸和漂白剂是不能混合的。

Other Sanitizers

其他消毒剂

Ozone (O₃) is a very effective bactericide, virucide and chemical oxidant. Ozone will react with iron and manganese, making both more easily removable by filtration. It also works independent of pH and it can inactivate chlorine if they are used simultaneously. However, ozone is a point of contact sanitizer that dissipates rapidly providing no sanitizing residual in the water system.

臭氧是非常有效的杀菌剂、杀病毒剂和化学氧化剂。臭氧会和铁、锰发生反应，使二者更易被过滤清除。臭氧可以不依赖pH而发挥作用。如果和氯同时使用会使氯失活。然而，臭氧是一种接触性消毒剂，可以快速消散，不会在饮水系统中有任何的残留。

Chlorine dioxide is making its way onto the market as a poultry drinking water sanitizer, partly because the application of chlorine dioxide has been resolved by new chlorine dioxide generation methods. Chlorine dioxide is as effective as chlorine, as a bactericide and even more effective as a virucide, and is also superior to chlorine for the removal of iron and manganese. It is not impacted by pH.

二氧化氯也进入了家禽饮水消毒剂市场，一个原因是二氧化氯已经通过其新产品而加以解决。二氧化氯和氯是一样有效的杀菌剂，并且在杀病毒方面会更加有效，并且在清除铁和锰方面也优于氯。二氧化氯不受PH的影响。

Final Notes:

最后的备注：

1. Do not use acid as the sole method of water treatment since acids alone can cause bacterial or fungal growth in water systems.

由于单独使用酸类会引起饮水系统中细菌或真菌的生长，所以不能只使用酸制剂。

2. Hydrogen peroxide is very aggressive and handling requires extreme care. It is important to follow handling and usage instructions very closely to prevent damage to people and equipment.

过氧化氢是非常强烈的，使用时需要加倍小心。严格遵循指导说明进行处置和使用以防止对人和设备造成损害。

3. Hydrogen peroxide is gaining popularity as a water sanitizer. PH and bicarbonate alkalinity play a major role in the effectiveness of hydrogen peroxide. Hydrogen peroxide can be stored onsite but it will deteriorate over time. It is a strong oxidant but it does not provide any lasting residual. A 50% hydrogen peroxide product stabilized with silver nitrate is proving to be a very effective sanitizer and line cleaner that does not damage water lines.

过氧化氢作为水体酸化剂变得很受欢迎。PH和碳酸氢盐碱对过氧化氢发挥作用方面起着主要作用。过氧化氢可以在现场贮存，但是时间过久的话会失效。过氧化氢是强氧化剂，但是不会产生时间持久的残留。含有硝酸银稳定剂的50%过氧化氢是一种非常有效的消毒剂和水线清洁剂，不会对水线产生损害。

4. When administering other products to your birds, it is a good idea to stop the inclusion of chlorine (and other sanitizers) in the drinking water. Chlorine will inactivate vaccines and reduce the effectiveness of some medications. Resume use of chlorine and/or other sanitizers after treatment is finished.

当给鸡群施用其他产品时，水线中最好停用加氯和其他的消毒剂。氯会使得疫苗失活及降低药物的有效性。药物使用完毕后恢复使用加氯和/或其他消毒剂。

5. Water line sanitation can be governed by local regulations. Please check with local authorities and always follow the manufacturers' instructions.

当地政府也会对水线消毒有相应的规定。请与当局核实这方面的信息，始终要遵循制造商的指导。